

WHAT IS CLAIMED IS:

1. A bonding pad structure, comprising:
an electrically conductive capping layer,
an electrically conductive first supporting layer disposed immediately under the electrically conductive capping layer, without any intervening layers between the electrically conductive capping layer and the electrically conductive first supporting layer, the electrically conductive first supporting layer configured as one of a sheet having no voids and a sheet having slotted voids in a first direction, and
an electrically conductive second supporting layer disposed under the electrically conductive first supporting layer, the electrically conductive second supporting layer configured as one of a sheet having slotted voids in the first direction, a sheet having slotted voids in a second direction, and a sheet having checkerboard voids.
2. The bonding pad structure of claim 1, further comprising an electrically nonconductive layer disposed between the electrically conductive first supporting layer and the electrically conductive second supporting layer.
3. The bonding pad structure of claim 1, further comprising a low k layer disposed between the electrically conductive first supporting layer and the electrically conductive second supporting layer.
4. The bonding pad structure of claim 1, further comprising a silicon oxide layer disposed between the electrically conductive first supporting layer and the electrically conductive second supporting layer.
5. The bonding pad structure of claim 1, wherein the electrically conductive capping layer is formed of aluminum.
6. The bonding pad structure of claim 1, wherein the electrically conductive first supporting layer is formed of copper.

7. The bonding pad structure of claim 1, wherein the electrically conductive first supporting layer has a thickness of no less than about one micron.
8. The bonding pad structure of claim 1, wherein the electrically conductive second supporting layer is formed of copper.
9. The bonding pad structure of claim 1, wherein the first direction is perpendicular to the second direction.
10. The bonding pad structure of claim 1, wherein the electrically conductive first supporting layer is configured as a sheet having no voids, and the electrically conductive second supporting layer is configured as a sheet having slotted voids in the first direction.
11. The bonding pad structure of claim 1, wherein the electrically conductive first supporting layer is configured as a sheet having no voids, and the electrically conductive second supporting layer is configured as a sheet having slotted voids in a second direction.
12. The bonding pad structure of claim 1, wherein the electrically conductive first supporting layer is configured as a sheet having no voids, and the electrically conductive second supporting layer is configured as a sheet having checkerboard voids.
13. The bonding pad structure of claim 1, wherein the electrically conductive first supporting layer is configured as a sheet having slotted voids in a first direction, and the electrically conductive second supporting layer is configured as a sheet having slotted voids in the first direction.
14. The bonding pad structure of claim 1, wherein the electrically conductive first supporting layer is configured as a sheet having slotted voids in a first direction, and the electrically conductive second supporting layer is configured as a sheet having slotted voids in a second direction.

15. The bonding pad structure of claim 1, wherein the electrically conductive first supporting layer is configured as a sheet having slotted voids in a first direction, and the electrically conductive second supporting layer is configured as a sheet having checkerboard voids.
16. An integrated circuit having the bonding pad structure of claim 1.
17. The bonding pad structure of claim 1, further comprising an input/output cell disposed directly underneath and electrically connected to the bonding pad structure.
18. The bonding pad structure of claim 1, further comprising:
electrically conductive third layers disposed under the electrically conductive second supporting layer, and
low k layers electrically insulating the electrically conductive third layers from one another and from the electrically conductive second supporting layer.
19. A bonding pad structure, comprising:
an electrically conductive capping layer,
an electrically conductive first supporting layer disposed immediately under the electrically conductive capping layer, without any intervening layers between the electrically conductive capping layer and the electrically conductive first supporting layer, the electrically conductive first supporting layer configured as a sheet having no voids,
an electrically conductive second supporting layer disposed under the electrically conductive first supporting layer, the electrically conductive second supporting layer configured as one of a sheet having slotted voids in a first direction, a sheet having slotted voids in a second direction, and a sheet having checkerboard voids, and
an electrically nonconductive layer disposed between the electrically conductive first supporting layer and the electrically conductive second supporting layer.

20. A bonding pad structure, comprising:

an electrically conductive capping layer,

an electrically conductive first supporting layer disposed immediately under the electrically conductive capping layer, without any intervening layers
5 between the electrically conductive capping layer and the electrically conductive first supporting layer, the electrically conductive first supporting layer configured as a sheet having slotted voids in a first direction,

an electrically conductive second supporting layer disposed under the electrically
10 conductive first supporting layer, the electrically conductive second supporting layer configured as one of a sheet having slotted voids in the first direction, a sheet having slotted voids in a second direction, and a sheet having checkerboard voids, and

an electrically nonconductive layer disposed between the electrically conductive
15 first supporting layer and the electrically conductive second supporting layer.